



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL WEATHER SERVICE  
Silver Spring, Md. 20910

August 21, 1984 W/OTS141: HGH

TO: All NWS Regional Headquarters, Area Electronics Supervisors,  
and Electronics Technicians (EHB-7 Distribution)

FROM: W/OTS1 - J. Michael St. Clair *J. M. St. Clair*

SUBJECT: Transmittal Memorandum for Engineering Handbook No. 7, Issuance 84-5

1. Material Transmitted:

Engineering handbook No. 7 - Communications Equipment, Section 3.4,  
Modification Note 18: NWR Transmitter B220 Low Power Alert Tones.

2. Summary:

Modification Note 18 incorporates changes in the NWR B220 transmitter to  
allow the transmitter to transmit Low Power Alert Tones if the PA power  
supply becomes disabled.

3. Effect on Other Instructions:

None.

4. Certification Statement:

This modification has been successfully field tested.

5. Reporting Modification to WSH Engineering Division:

Target date for completion of this modification is Sept. 10, 1984.

All completed equipment modifications shall be reported on WS Form H-28,  
Engineering Progress Report, as outlined in EHB-4, Part 2.

EHB-7  
Issuance 84- 5



Engineering Division  
W/OTS14

COMMUNICATIONS EQUIPMENT MODIFICATION NOTE 18  
(for Electronics Technicians)

SUBJECT : NWR Transmitter B220 Low Power Alert Tones

PURPOSE : To incorporate changes in the NWR B220 transmitter to transmit Low Power Alert Tones if the PA power supply becomes disabled.

EQUIPMENT AFFECTED : All NWR B220 Transmitters

PARTS REQUIRED : PVC Hookup Wire, 20-22 AWG, approximately 4 ft. total length. Obtain locally.  
Connector pin, one each, SRS P/N PM0007, used in SRS connector No. P00253  
Connector Pin, one each, SRS P/N PM0008, used in SRS connector No. J00253

MOD PROCUREMENT : Spare connector pins will be sent to AES should you require them.

SPECIAL TOOLS REQUIRED : None.

TEST EQUIPMENT REQUIRED : NWR Receiver

TIME REQUIRED : 2 Work hours.

General:

At present, B220 NWR transmitters are configured so that the Power Amplifier (Unit 1) Control Board must have power applied to generate Low Power Alert Tones. If the Power Supply (Unit 2) fails, the system cannot generate alert tones. This modification will cause the system to ground the Remote Bypass Tone Enable signal line and generate alert tones even if the Power Supply fails. Utilizing unused contacts in the Power Supply relay K4, the Remote Bypass Tone Enable line will be pulled to ground whenever the Power Supply fails and relay K4 is de-energized.

NOTE: The implementation of this modification presumes that the B220 has been modified to provide Low Power Alert Tone audio. If you do not have the Remote Fault Tone Encoder Assembly A3 in the SR-402R Remote Control Unit, please inform the W/OTS13 NWR Project Engineer through your regional office and the necessary parts will be forwarded.

Procedure:

Begin installation by disabling transmitter and disconnecting power.

A. Power Supply (Unit 2) Modification

1. Disconnect cables from power supply (Unit 2) and remove power supply from cabinet.
2. Add a jumper wire (36 inches) from J3, Pin 4, to Relay K4, Pin 3 (see attached Figure 9-3, page 9-6). Dress jumper wire along factory installed cabling.

NOTE 1

J3 (J00253), Pin 4 connector pin may not be installed. If not, contact your AES and a connector pin will be forwarded.

3. Add a jumper wire (6 inches) from Relay K4, Pin 8, to a ground terminal lug near the relay. Several ground lugs are available; choose a convenient lug.
4. Verify K4, Pin 8, and K4, Pin 3, are electrically connected while the relay is de-energized (power is disconnected). Verify J3, Pin 4, is grounded with the relay de-energized.
5. Reinstall power supply in cabinet and reconnect cables.

B. Power Amplifier (Unit 1) Modification

1. Slide PA Unit forward, out of cabinet.
2. Add jumper wire (4 inches) from J3, Pin 4, to J2, Pin 16 (see Figure 6-13, page 6-21/6-22, attached).

NOTE 2

A wire is already connected to Pin 16. Do not remove. Add the jumper wire to the pin in addition to the factory installed wire. Also, J3 (P00253), Pin 4, connector pin may not be installed. If not, contact your AES and a connector pin will be forwarded.

3. Reconnect cables to PA if disconnected. Reinstall PA in cabinet. Restore power to the cabinet.

C. Test for Proper Operation of Low Power Alert Tone

Now that the modification is complete, test the operation of the Low Power Alert Tone. With the transmitter in LOW Power Transmit (Power Amp front panel control off), trip the power supply circuit breakers OFF (power supply front panel). Verify that the Low Power Alert Tone has been activated, both with the PA control in the OFF position and with the power supply circuit breakers OFF.

Instruction Manual Changes

Make the following changes to the Instruction Manual for NOAA Weather Radio Transmitter (Type B220).

Two each of the revised pages are attached to this note; one copy is to be added to the el tech's instructional manual and the other copy is to remain attached to this note.

- A. Instruction Material - None.
- B. Schematics and/or Diagrams - Figure 9-3, page 9-6; and Figure 6-13, page 6-21/6-22.
- C. Parts List - None.

## POWER AMPLIFIER, UNIT 1

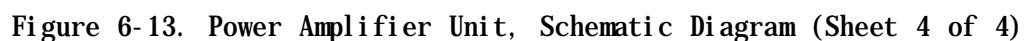


Figure 9-3 Power Supply Unit 2 Schematic Diagram (Sheet 1 of 2)

ENABLE

1. ORG		2. PAY PERIOD (Last day)			3. STATION		4. AREA SECTOR		5. INITIALS		6. HOURLY SALARY		7. REPORTED BY:		8. GENERAL PURPOSE		WS FORM H-28 (7-77)		U. S. DEPARTMENT OF COMMERCE NOAA NATIONAL WEATHER SERVICE		
		YEAR	MONTH	DAY			REG.														
ENGINEERING PROGRESS REPORT																					
S E Q	9. STATION	10. AREA SECT	11. CATEGORY PROGRAM	12. WORK TYPE	13. TOTAL - TIME (Hours)					14. TRAVEL MILES	15. PER DIEM (Travel wh. S)	16. COST CODE	17. COST (Dollars)	18. ORDER NUMBER	19. NOTES						
					RT	NT	FT	MT	ST												
1A			B 2 2 0	M 0 D																	MOD # 18 B220 Serial #
1B																					Date Modification completed
1C																					
1D																					
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N			ADMIN.																		FOR LEAVE ENTER WORK TYPE: LVA = Annual Leave LVC = Compensatory Leave LVH = Holiday LVS = Sick LVM = Military or Other
O			LEAVE																		
20. REMARKS															C = CONTRACTS T = TRANSPORTATION OF THINGS COST CODES: P = PURCHASED LOCALLY G = GOVERNMENT FURNISHED N = NONCAPITALIZED PROPERTY M = CAPITALIZED PROPERTY						

Blocks 1 through 10 must also be filled out.

Enter time required to complete Mod in Col. 13d (MT).

This Mod must be reported into the EMRS System before 30 days following modification completion.